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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
|-----------------|-------------|----------------------|---------------------|------------------|

09/913,595

10/22/2001

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501.40474X00

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05/15/2007

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EXAMINER

HENNING, MATTHEW T

ART UNIT

PAPER NUMBER

2131

MAIL DATE

DELIVERY MODE

05/15/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

09/913,595

Applicant(s)

SASAMOTO ET AL.

Examiner

Matthew T. Henning

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 February 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 and 47-49 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 and 47-49 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

1 This action is in response to the communication filed on 2/20/2007.

2 **DETAILED ACTION**

3 ***Response to Arguments***

4 Applicants' arguments filed 2/20/2007 have been fully considered but they are not
5 persuasive.

6 Regarding applicants' argument that the first key information of Chou is stored in the
7 recording medium, the examiner does not find the argument persuasive. Chou teaches in Col. 2
8 Last Paragraph and Col. 3 Paragraph 5 that the transponder which stores the first key information
9 is separate from the recording medium. As such, the examiner does not find the argument
10 persuasive.

11 Regarding applicants' argument that Chou's keys are not apparatus specific, the examiner
12 does not find the argument persuasive. This is due to the same reasoning previously provided.
13 Additionally, the applicants have stated that Chou's keys are not apparatus specific because the
14 key "relates to transient items, not fixed items or characteristics of the apparatus". In response to
15 applicant's argument that the references fail to show certain features of applicant's invention, it is
16 noted that the features upon which applicant relies (i.e., the key relating to fixed items or
17 characteristics of the apparatus) are not recited in the rejected claim(s). Although the claims are
18 interpreted in light of the specification, limitations from the specification are not read into the
19 claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). As such, the
20 examiner does not find the argument persuasive.

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Further note the new grounds of rejection presented below for the newly added claim 49 as well as amended claims 47-48. These new grounds of rejection are necessitated by the amendments to the claims.

Because the applicants' arguments have not been found persuasive, the examiner has maintained the previous prior art rejections of the claims.

Claims 1-18, and 47-49 have been examined and 19-46 have been cancelled.

All objections and rejections not set forth below have been withdrawn.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chou (US Patent Number 6,167,136), and further in view of Wonfor et al. (US Patent Number 6,381,747) hereinafter referred to as Wonfor.

Regarding claim 1, Chou disclosed a digital signal recorder for recording a digital signal on a removable recording medium unit including a recording medium (See Chou Abstract and Fig. 2 Data Medium), comprising: first key information generation unit to generate at least one item of first key information which is apparatus-specific key information (See Chou Col. 6 Lines 34-38 DKA); second key information generation unit to generate at least one item of second key

1 information (See Chou Col. 6 Lines 39-43 and Col. 7 Paragraph 1; i); key generation unit which
2 receives said both of said first and second key information generated by said first key
3 information generation unit and said second key information generation unit and performs a
4 prescribed arithmetic operation thereon to generate a key (See Chou Col. 6 Lines 44-58); an
5 encryption circuit which receives said key and said digital signal and encrypts said digital signal
6 with said key (See Chou Col. 6 Lines 59-65), and outputs the resulting encrypted digital signal in
7 a case where said digital signal needs copy protection (See Chou Col. 6 Lines 59-65); and a
8 recording circuit which records, onto said removable recording medium unit, at least one of said
9 at least one item of second key information generated by said second key information generation
10 unit, together with said encrypted digital signal in a case where said digital signal needs copy
11 protection (See Chou Col. 6 Line 66 – Col. 7 Line 5), and wherein said first key information as
12 said apparatus specific key information is not recorded on any part of said removable recording
13 medium unit (data medium) (See Chou Fig. 2, Fig. 4 and Col. 2 Last Paragraph), but failed to
14 disclose recording said digital signal without encryption in a case where said digital signal needs
15 no copy protection.

16 Wonfor teaches that not all data needs to be copy protected and teaches a system that
17 turns off copy protection when it is not needed (See Wonfor Col. 2 Line 66 – Col. 3 Line 7 and
18 Col. 12 Table 2).

19 It would have been obvious to the ordinary person skilled in the art at the time of
20 invention to employ the teachings of Wonfor in the copy protection system of Chou by only
21 scrambling the data that needed copy protection and not scrambling the data that didn't need

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1 copy protection. This would have been obvious because the ordinary person would have been
2 motivated to prevent unnecessary processing to copy protect data that did not need it.

3 Regarding claim 2, Chou and Wonfor disclosed that said second key information
4 generation unit generates said second key information by using a random number generator (See
5 Chou Col. 7 Paragraph 1), and said digital signal has a packet format of a prescribed length (See
6 Chou Col. 6 Lines 17-23).

7 Regarding claim 3, Chou and Wonfor disclosed that said second key information
8 generation unit generates said second key information by using a random number generator (See
9 Chou Col. 7 Paragraph 1), the second key information generation unit has a function for updating
10 said at least one item of said second key information at a prescribed time interval (See Chou Col.
11 5 Lines 34-39, Col. 6 Lines 59-61 and 7 Lines 2-5); and said recording circuit has a function for
12 recording information capable of identifying timing when said second key information
13 generation unit updates said key information (See Chou Col. 5 Lines 43-48).

14 Regarding claim 4, Chou and Wonfor disclosed that said digital signal has a packet
15 format of a prescribed length (See Chou Col. 5 Lines 34-39); and said recording circuit has a
16 function for adding identifying information capable of identifying timing where said second key
17 information generation unit updates said second key information, and where said identifying
18 information is added to packets of said digital signal and recorded on said removable recording
19 medium unit (See Chou Col. 5 Paragraph 4 and Col. 6 Paragraph 5 and Col. 7 Paragraph 1).

20 Regarding claim 5, Chou and Wonfor disclosed that said second key information
21 generation unit generates said second key information by using a random number generator (See
22 Chou Col. 7 Paragraph 1), said encryption circuit has a function capable of selecting between a

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1 first function for encrypting and outputting said digital signal, and a second function for
2 outputting said digital signal as is without encryption (See the rejection of claim 1 above); and
3 said recording circuit has a function for recording, in a prescribed area on said removable
4 recording medium unit, encryption flag information indicating whether or not said digital signal
5 is encrypted, and, when not encrypted, not recording said second key information (See Wonfor
6 Col. 8 Lines 17-23 and Table 2).

7 Regarding claim 6, Chou and Wonfor disclosed that said digital signal has a packet
8 format of a prescribed length (See Chou Col. 5 Lines 34-39); and said recording circuit has a
9 function for adding encryption flag information indicating whether or not said digital signal is
10 encrypted, to packets of said digital signal, and a function for recording on said removable
11 recording medium unit (See Wonfor Col. 8 Lines 17-23 and Table 2).

12 Claims 7-12, and 14-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over
13 the combination of Chou and Wonfor, as applied to claim 1 above, and further in view of Kim
14 (US Patent Number 6,466,733).

15 Regarding claim 7, the combination of Chou and Wonfor disclosed a digital signal
16 recorder in which a digital signal of a packet format of a prescribed length is input comprising:
17 first key information generation unit to generate at least one item of first key information which
18 is apparatus specific key information; second key information generation unit to generate at least
19 one item of second key information; key generation unit to receive both of said first and second
20 key information generated by said first key information generation unit and said second key
21 information generation unit, and perform a prescribed arithmetic operation to generate a key; an
22 encryption circuit which receives said key and said digital signal, encrypts said digital signal

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1 with said key and outputs the resulting encrypted digital signal in a case where said digital signal
2 needs copy protection; and a recording circuit which records, onto said removable recording
3 medium unit (data medium), at least one of said at least one item of second key information
4 generated by said second key information generation unit, together with said encrypted digital
5 signal in a case where said digital signal needs copy protection, and records said digital signal
6 without encryption in a case where said digital signal needs no copy protection, and wherein said
7 first key information as said apparatus-specific key information, is not recorded on any part of
8 said removable recording medium unit (See rejection of claims 1-2 above), but failed to disclose
9 dividing the signal into other prescribed lengths; a synchronization signal, recording information
10 signal, auxiliary information signal, and first error correction code are added thereto to define a
11 block format; one track is formed by a prescribed number of blocks thus made; a second error
12 correction code is added in units of n tracks (where n is an integer 1 or greater); said second error
13 correction code is also divided and said first error correction code is added thereto to constitute a
14 block format; and said tracks are recorded on said removable recording medium unit.

15 Kim teaches a method for recording a digital transport stream by creating tracks from
16 video packets and providing three error correction codes to each track (See Kim Figs. 2, 3, and 5
17 and Col. 6 Paragraphs 4-7 and Col. 7 Paragraphs 3-4).

18 It would have been obvious to the ordinary person skilled in the art at the time of
19 invention to employ the teachings of Kim in the recorder of Chou and Wonfor by storing the
20 encrypted packets in the ECC block format of Kim. This would have been obvious because the
21 ordinary person skilled in the art would have been motivated to protect the stored programs
22 against errors.

1 Regarding claim 8, see the rejection of claim 1 above wherein it would have been
2 obvious to store the frame identification number in an auxiliary storage area because the frame
3 identification number is auxiliary data.

4 Regarding claim 9, see the rejection of claim 3 above.

5 Regarding claim 10, Chou, Wonfor, and Kim disclosed that timing information was
6 included in the stored block data (see Kim Col. 5 Paragraph 6).

7 Regarding claim 11, Chou, Wonfor, and Kim disclosed that timing information was
8 stored in an auxiliary section (See Kim Col. 6 Paragraph 4 and Col. 7 Paragraph 3).

9 Regarding claim 12, Chou, Wonfor, and Kim disclosed adding timing information to the
10 blocks identifying the timing of the packets (See Kim Col. 2 Lines 54-57)

11 Regarding claim 13, Chou, Wonfor, and Kim disclosed that the frame identification
12 number was updated every frame and there was at least one frame per track (See Chou Col. 5
13 Paragraph 4). Therefore, the frame identification number was updated for every track.

14 Regarding claim 14, see the rejection of claim 7 above.

15 Regarding claim 15-17, see the rejection of claims 5-6 above.

16 Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination
17 of Chou, Wonfor, and Kim, as applied to claim 14 above, and further in view of Yuval et al. (US
18 Patent Number 5,586,186) hereinafter referred to as Yuval.

19 The combination of Chou, Wonfor, and Kim disclosed encrypting certain data and not
20 other data, (See the rejection of claim 1 above), but failed to disclose switching to determine
21 whether or not to encrypt every n tracks.

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1 Yuval teaches that for efficiency, only every nth track should be encrypted (See Yuval
2 Col. 6 Lines 13-23).

3 It would have been obvious to the ordinary person skilled in the art at the time of
4 invention to employ the teachings of Yuval in the copy protection system of Chou, Wonfor, and
5 Kim by encrypting every nth track. This would have been obvious because the ordinary person
6 skilled in the art would have been motivated to make the copy protection system more efficient
7 in both the encryption and decryption.

8 Claim 49 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination
9 of Chou, and Wonfor, as applied to claim 1 above, and further in view of Shear et al. (Patent
10 Application Publication 2001/0042043) hereinafter referred to as Shear.

11 Chou and Wonfor taught a digital signal recorder for recording a digital signal on a
12 removable recording medium unit including a recording medium, comprising: first key
13 information generation unit to generate at least one item of first key information which is
14 apparatus-specific key information; second key information generation unit to generate at least
15 one item of second key information; key generation unit which receives both of said first and
16 second key information generated by said first key information generation unit and said second
17 key information generation unit, and performs a prescribed arithmetic operation thereon to
18 generate a key; an encrypting circuit which receives said key and said digital signal and encrypts
19 said digital signal with said key, and outputs the resulting encrypted digital signal, in a case
20 where said digital signal needs copy protection; and a recording circuit which records, onto said
21 removable recording medium unit, at least one of said at least one item of second key
22 information generated by said second key information generation unit, together with said

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1 encrypted digital signal in a case where said digital signal needs copy protection, and records
2 said digital signal without encryption in a case where said digital signal needs no copy
3 protection, wherein a copy of said first key information is not stored on any part of the
4 removable recording medium unit (See the rejection of claim 1 above), but failed to disclose that
5 the first key information was not carried with the removable recording medium unit.

6 Shear teaches a system similar to the system of Chou, where key encrypting keys are
7 stored on a recording medium, alternatively the keys can be stored in the content player (See
8 Shear Paragraphs 0218-0219).

9 It would have been obvious to the ordinary person skilled in the art at the time of
10 invention to employ the teachings of Shear in the recording/playback device of Chou and
11 Wonfor by storing the secret deciphering key in a secure memory of the optical disk player. This
12 would have been obvious because the ordinary person skilled in the art would have been
13 motivated to restrict playback to only those devices which contain the correct deciphering key.

14 Claim 47 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination
15 of Chou, Wonfor, and Shear as applied to claim 49 above, and further in view of Chandra et al.
16 (US Patent Number 4,814,140) hereinafter referred to as Chandra.

17 Chou, Wonfor, and Shear taught a digital signal recorder for recording a digital signal on
18 a removable recording medium unit including a recording medium, comprising: first key
19 information generation unit to generate at least one item of first key information which is
20 apparatus-specific key information; second key information generation unit to generate at least
21 one item of second key information; key generation unit which receives both of said first and
22 second key information generated by said first key information generation unit and said second

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1 key information generation unit, and performs a prescribed arithmetic operation thereon to
2 generate a key; an encrypting circuit which receives said key and said digital signal and encrypts
3 said digital signal with said key, and outputs the resulting encrypted digital signal, in a case
4 where said digital signal needs copy protection; and a recording circuit which records, onto said
5 removable recording medium unit, at least one of said at least one item of second key
6 information generated by said second key information generation unit, together with said
7 encrypted digital signal in a case where said digital signal needs copy protection, and records
8 said digital signal without encryption in a case where said digital signal needs no copy
9 protection, wherein a copy of said first key information is not carried with any part of the
10 removable recording medium unit (See the rejection of claim 49 above), but failed to disclose
11 pre-storing the first key information in said recorder at the time the recorder was manufactured.

12 Chandra teaches that in order to provide an apparatus with the right to execute encrypted
13 content, the decryptor can be provided with the key decryption key during manufacture (See
14 Chandra Col. 7 Lines 7-13).

15 It would have been obvious to the ordinary person skilled in the art at the time of
16 invention to employ the teachings of Chandra in the encrypted content system by providing the
17 key encryption/decryption key to the player during manufacture. This would have been obvious
18 because the ordinary person skilled in the art would have been motivated to provide the player
19 with the right to execute the content.

20 Claim 48 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination
21 of Chou, Wonfor, and Kim as applied to claim 49 above, and further in view of Shear and
22 Chandra.

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1 Chou, Wonfor, and Kim taught a digital signal recorder for recording a digital signal on a
2 removable recording medium unit including a recording medium, comprising: first key
3 information generation unit to generate at least one item of first key information which is
4 apparatus-specific key information; second key information generation unit to generate at least
5 one item of second key information; key generation unit which receives both of said first and
6 second key information generated by said first key information generation unit and said second
7 key information generation unit, and performs a prescribed arithmetic operation thereon to
8 generate a key; an encrypting circuit which receives said key and said digital signal and encrypts
9 said digital signal with said key, and outputs the resulting encrypted digital signal, in a case
10 where said digital signal needs copy protection; and a recording circuit which records, onto said
11 removable recording medium unit, at least one of said at least one item of second key
12 information generated by said second key information generation unit, together with said
13 encrypted digital signal in a case where said digital signal needs copy protection, and records
14 said digital signal without encryption in a case where said digital signal needs no copy
15 protection, wherein a copy of said first key information is not carried with any part of the
16 removable recording medium unit (See the rejection of claim 49 above), but failed to disclose
17 pre-storing the first key information in said recorder at the time the recorder was manufactured.

18 Shear teaches a system similar to the system of Chou, where key encrypting keys are
19 stored on a recording medium, alternatively the keys can be stored in the content player (See
20 Shear Paragraphs 0218-0219).

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1 Chandra teaches that in order to provide an apparatus with the right to execute encrypted
2 content, the decryptor can be provided with the key decryption key during manufacture (See
3 Chandra Col. 7 Lines 7-13).

4 It would have been obvious to the ordinary person skilled in the art at the time of
5 invention to employ the teachings of Shear in the recording/playback device of Chou, Wonfor,
6 and Kim by storing the secret deciphering key in a secure memory of the optical disk player.
7 This would have been obvious because the ordinary person skilled in the art would have been
8 motivated to restrict playback to only those devices which contain the correct deciphering key.

9 It further would have been obvious to the ordinary person skilled in the art at the time of
10 invention to employ the teachings of Chandra in the encrypted content system of Chou, Wonfor,
11 and Kim by providing the key encryption/decryption key to the player during manufacture. This
12 would have been obvious because the ordinary person skilled in the art would have been
13 motivated to provide the player with the right to execute the content.

14 *Conclusion*

15 Claims 1-18, and 47-49 have been rejected.

16 The prior art made of record and not relied upon is considered pertinent to applicant's
17 disclosure.

18 Pexravian et al. (US Patent Number 6,363,154) teaches a communication system in
19 which a secret key and a random number are hashed to create a working key which is used to
20 encrypt data.

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1 Chandra teaches that in order to provide an apparatus with the right to execute encrypted
2 content, the decryptor can be provided with the key decryption key during manufacture (See
3 Chandra Col. 7 Lines 7-13).

4 It would have been obvious to the ordinary person skilled in the art at the time of
5 invention to employ the teachings of Shear in the recording/playback device of Chou, Wonfor,
6 and Kim by storing the secret deciphering key in a secure memory of the optical disk player.
7 This would have been obvious because the ordinary person skilled in the art would have been
8 motivated to restrict playback to only those devices which contain the correct deciphering key.

9 It further would have been obvious to the ordinary person skilled in the art at the time of
10 invention to employ the teachings of Chandra in the encrypted content system of Chou, Wonfor,
11 and Kim by providing the key encryption/decryption key to the player during manufacture. This
12 would have been obvious because the ordinary person skilled in the art would have been
13 motivated to provide the player with the right to execute the content.

14 *Conclusion*

15 Claims 1-18, and 47-49 have been rejected.

16 The prior art made of record and not relied upon is considered pertinent to applicant's
17 disclosure.

18 Pexravian et al. (US Patent Number 6,363,154) teaches a communication system in
19 which a secret key and a random number are hashed to create a working key which is used to
20 encrypt data.

1 Ishiguro (US Patent Number 5,796,839) teaches a system which uses a working key to
2 encrypt data to be stored on a recording medium in such a way that without knowledge of the
3 master key the data is not recoverable in any way other than brute force.

4 Applicant's amendment necessitated the new ground(s) of rejection presented in this
5 Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).
6 Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

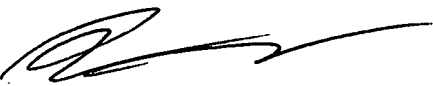
7 A shortened statutory period for reply to this final action is set to expire **THREE**
8 **MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO**
9 **MONTHS** of the mailing date of this final action and the advisory action is not mailed until after
10 the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period
11 will expire on the date the advisory action is mailed, and any extension fee pursuant to 37
12 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,
13 however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this
14 final action.


15 Any inquiry concerning this communication or earlier communications from the
16 examiner should be directed to 11 whose telephone number is (571) 272-3790. The examiner
17 can normally be reached on M-F 8-4.

18 If attempts to reach the examiner by telephone are unsuccessful, the examiner's
19 supervisor, Ayaz Sheikh can be reached on (571) 272-3795. The fax phone number for the
20 organization where this application or proceeding is assigned is 571-273-8300.

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1 Information regarding the status of an application may be obtained from the Patent
2 Application Information Retrieval (PAIR) system. Status information for published applications
3 may be obtained from either Private PAIR or Public PAIR. Status information for unpublished
4 applications is available through Private PAIR only. For more information about the PAIR
5 system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR
6 system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would
7 like assistance from a USPTO Customer Service Representative or access to the automated
8 information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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15 Matthew Henning
16 Assistant Examiner
17 Art Unit 2131
18 5/9/2007


19 AYAZ SHEIKH
20 SUPERVISORY PATENT EXAMINER
21 TECHNOLOGY CENTER 2100